



Bird nest with eggs, Sitia, Crete. Photo: Petro Stelte, CC BY-SA 4.0

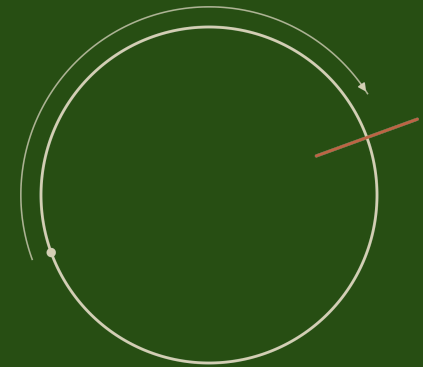
THRIVING IN THE EXTREMES · CCS 2026

Thinking in Extremes

*Coherence, Rupture, Regeneration:
Conditions for Flourishing*

Alexander Sabine

Active Inference Institute

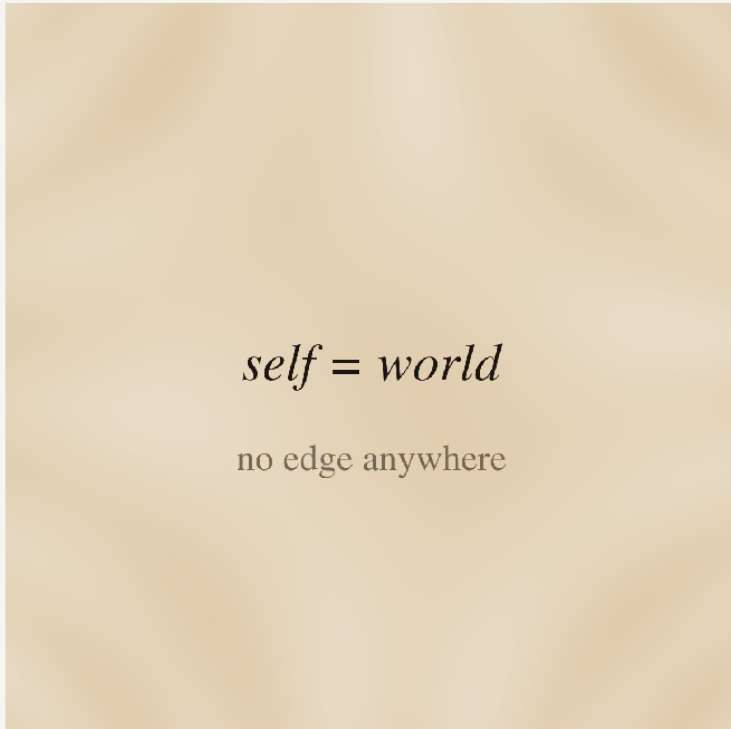


Catchphrase from Monty Python's Flying Circus (BBC, 1969–74)



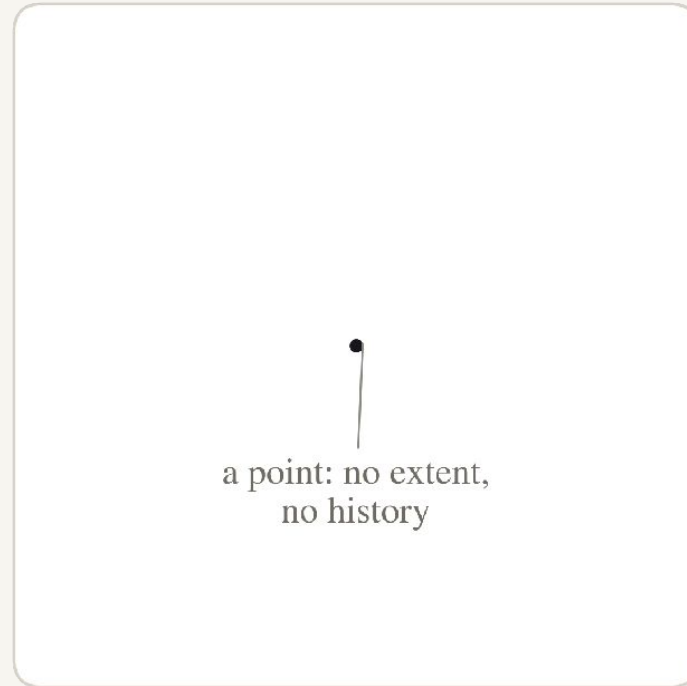
(The difference matters)

Everywhere, nowhere, or somewhere in between?



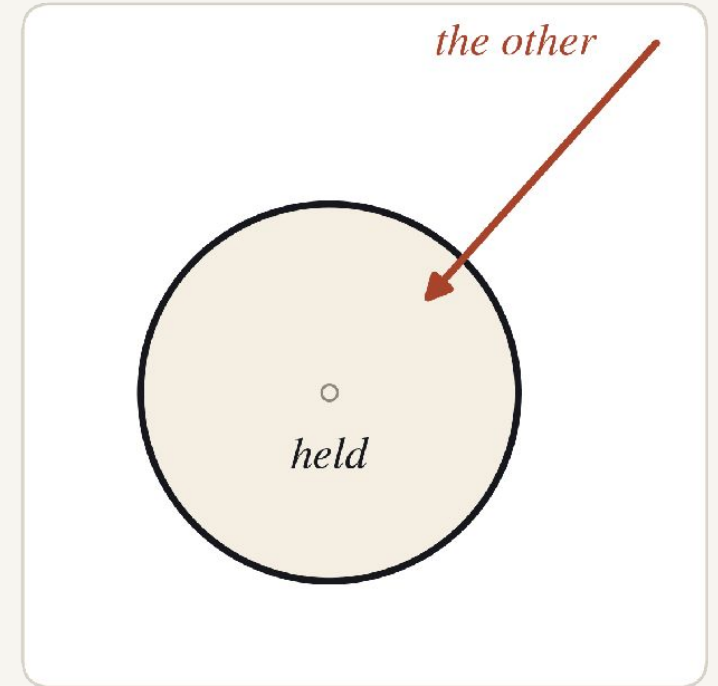
everywhere at once

no boundary — nothing can happen to you



nowhere at all

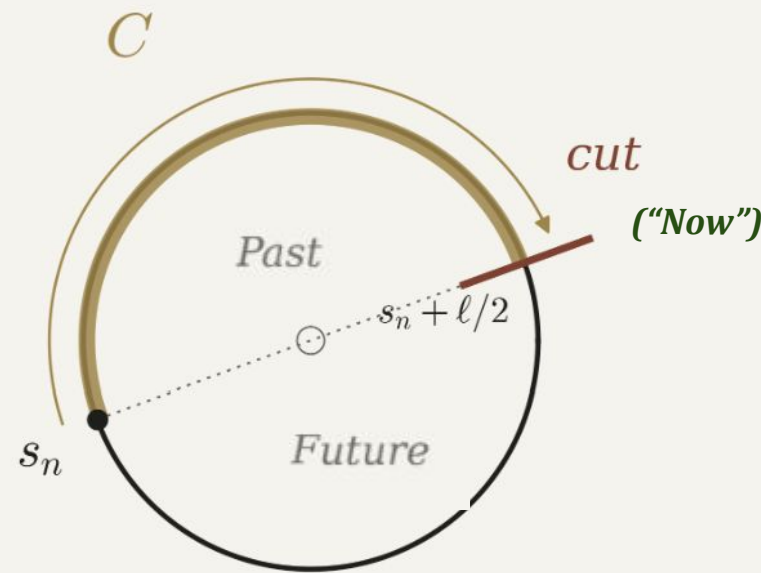
no history — no one for anything to happen to



somewhere

held, and met — a place to stand, and an other

A loop, a count, a cut, a seed from the past



a loop

$$s \in \mathbb{R}/\ell\mathbb{Z}$$

change as a circle: a loop of distinguishable states, the carrier

a count

$$C(t) = \frac{1}{\sigma} \int_{t_n}^t \sqrt{\dot{x}^\top g(x) \dot{x}} \, d\tau$$

coherence: distinguishable change, counted along your own path

a cut

$$s(t) - s(t_n) = \ell/2, \quad C^* = \frac{\ell}{2\sigma}$$

at the half-turn: it separates occasions, it doesn't erase them

a seed from the past

$$m_{n+1} = q m_n + (1 - q) \Phi_n, \quad q = \frac{\Omega \pi_m}{\Omega \pi_m + \pi_\Phi}$$

regeneration: settled past and new, each weighted by its precision π

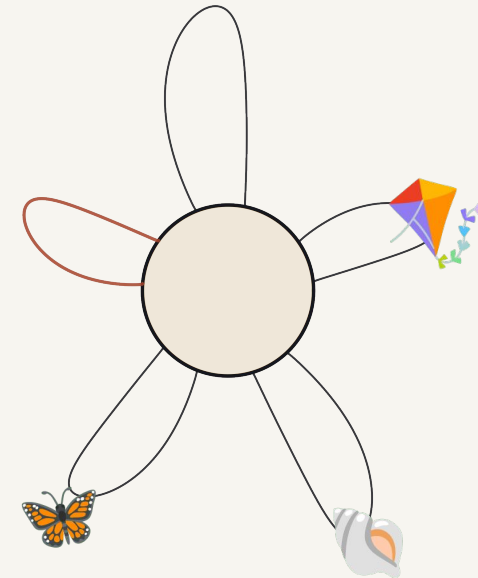
s	position on the loop, in units of change	ℓ	once round the loop
σ	one resolvable step: the unit we count in	C	coherence: steps of change travelled
C^*	half the loop in steps: distance to the cut	t_n	the moment of the n-th cut
Φ_n	what occasion n leaves behind	m_n	the seed carried into the next occasion
q	how much older occasions count (0–1)	Ω	weight on the past's precision
x	the system's state as it changes	g	Fisher metric: distinguishability

A secure base

Child is born
into a History

What is out
there?

Oh, that.



explore · encounter · return



Van Gogh's First Steps, after Millet. Look at the space between the arms.

Bowlby, Attachment (1969) and A Secure Base (1988); Ainsworth, Blehar, Waters & Wall, Patterns of Attachment (1978)

Good enough, not perfect

- **Holding** continuity of being
- **Mirroring** and its necessary, repairable failures
- **Survival** the other outlives my destruction in fantasy — and becomes real
- **Potential space** between inner and outer, where playing lives

*If the other **only** ever mirrors us, has anyone arrived?*

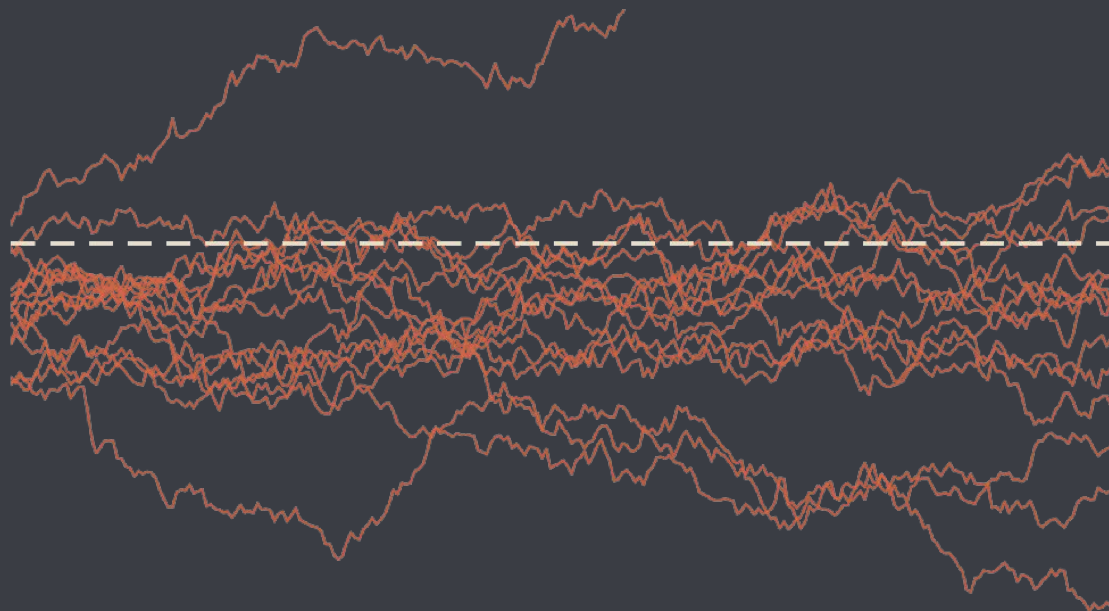
Winnicott, 'Transitional objects...' (1953); 'The theory of the parent-infant relationship' (1960); 'Mirror-role of mother and family...' (1967); 'The use of an object' (1969)



Mary Cassatt, Mother and Child, c. 1905. National Gallery of Art, CC0.

The perfect mirror

A perfect mirror, forever



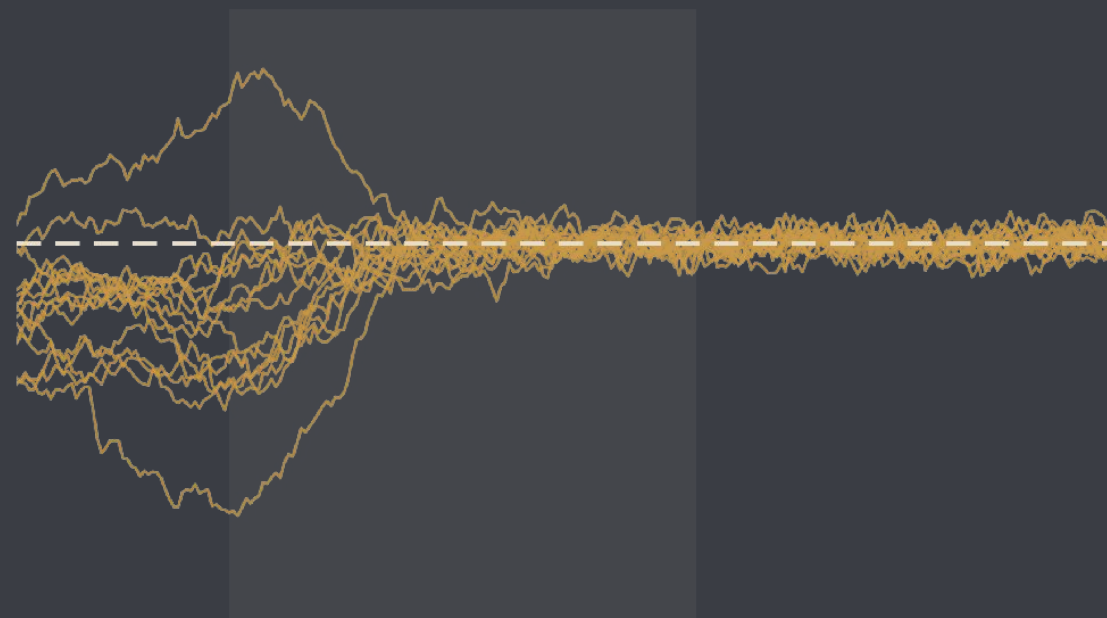
felt disagreement

Never contradicted, each moves only by its own noise. A room of perfect mirrors ends up everywhere — and shares no world.

Toy model: 16 learners, one updating rule, identical noise in both panels; dashed line = the other's own value. Right panel after Winnicott (1960; 1971)

*A belief is grounded by constraint from the outside.
The difference matters.*

Good enough: held, then gradually failed

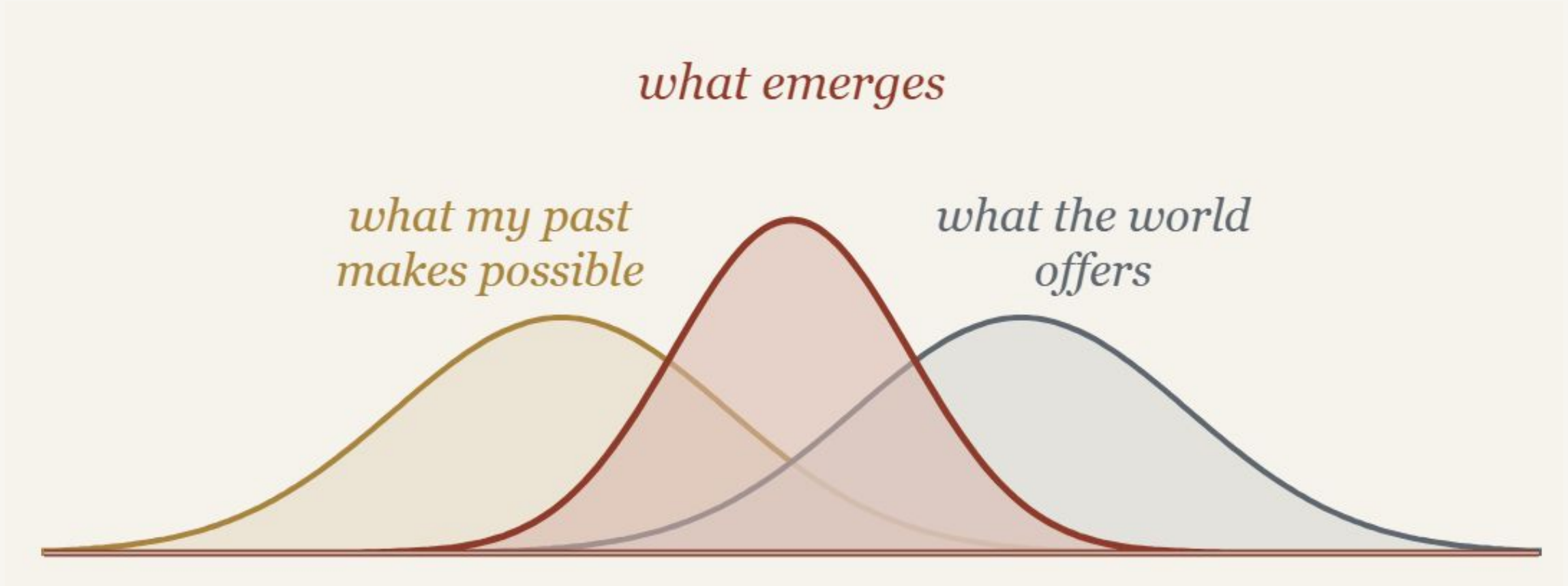


felt disagreement



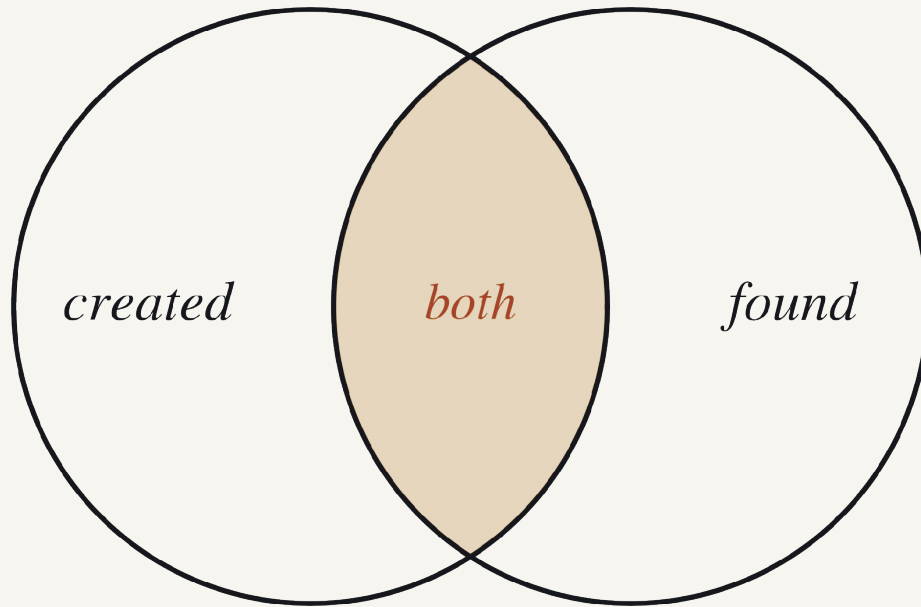
Mirroring first, then graduated failure (shaded). Frustration rises, is repaired, and the other (dashed) arrives. “Optimal Frustration” (Kohut)

What emerges in the space between



My history opens a space of possibilities. The world offers its own shape. In between, something emerges that neither held alone — sharper, newer, real.

A paradox not to be resolved



The blanket, the bear, the first idea: did the child create it, or find it?



- Resolve it inward (Created Only)
only mine: the perfect mirror; solipsism
- Resolve it outward (Discovered Only)
only out there: single vision; 'Newton's sleep'
- Hold it (Created & Discovered - Paradox)
playing, art, science, love: meeting a world I helped to make

Winnicott's request: accepted, tolerated, respected — *"and for it not to be resolved."*

D. W. Winnicott, *Playing and Reality* (London: Tavistock, 1971), Introduction

The score is not the music



Substance

settled history, representation
organisation, memory, models,
attractors, inherited constraint

Being in Time

Representational Model

Static / It became
(consecrated history outside the
system)



Process

the actual unfolding
encounter, choice,
transformation

Becoming through Time

Processual Change

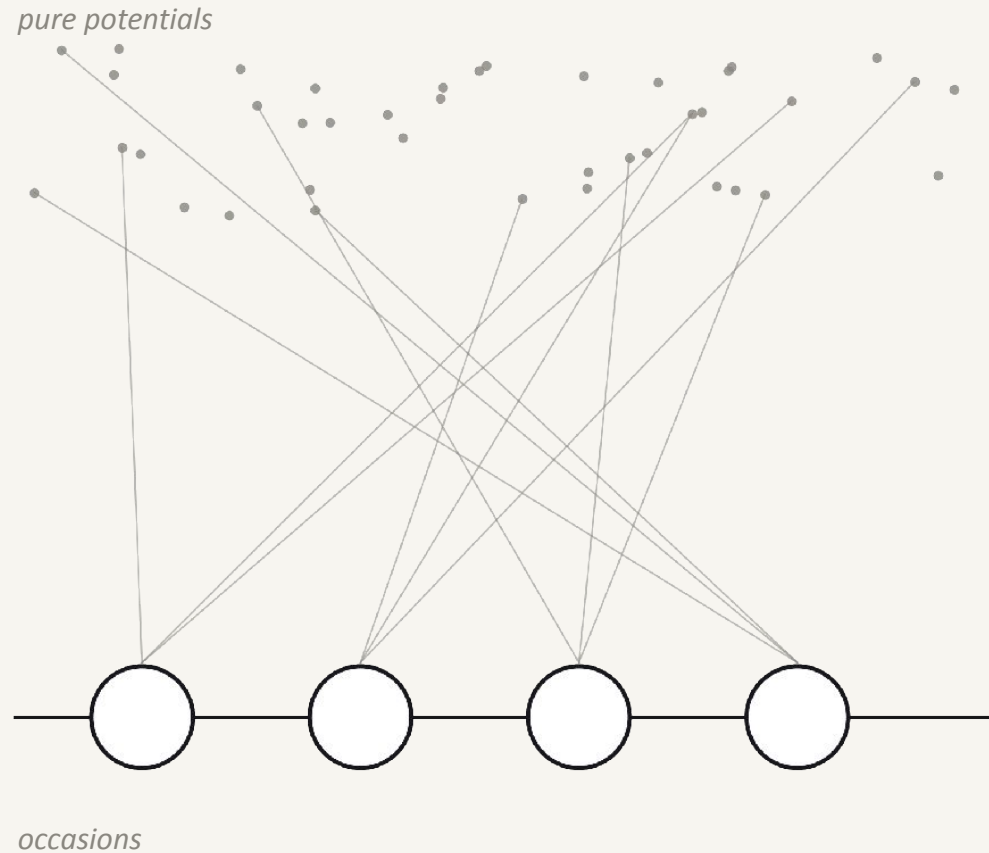
Flowing / It becomes
(through the consecrated
history outside the
system)

“The many become one, and are increased by one.”

A. N. Whitehead, *Process and Reality* (1929), corrected edn, ed. Griffin & Sherburne (New York: Free Press, 1978), p. 21

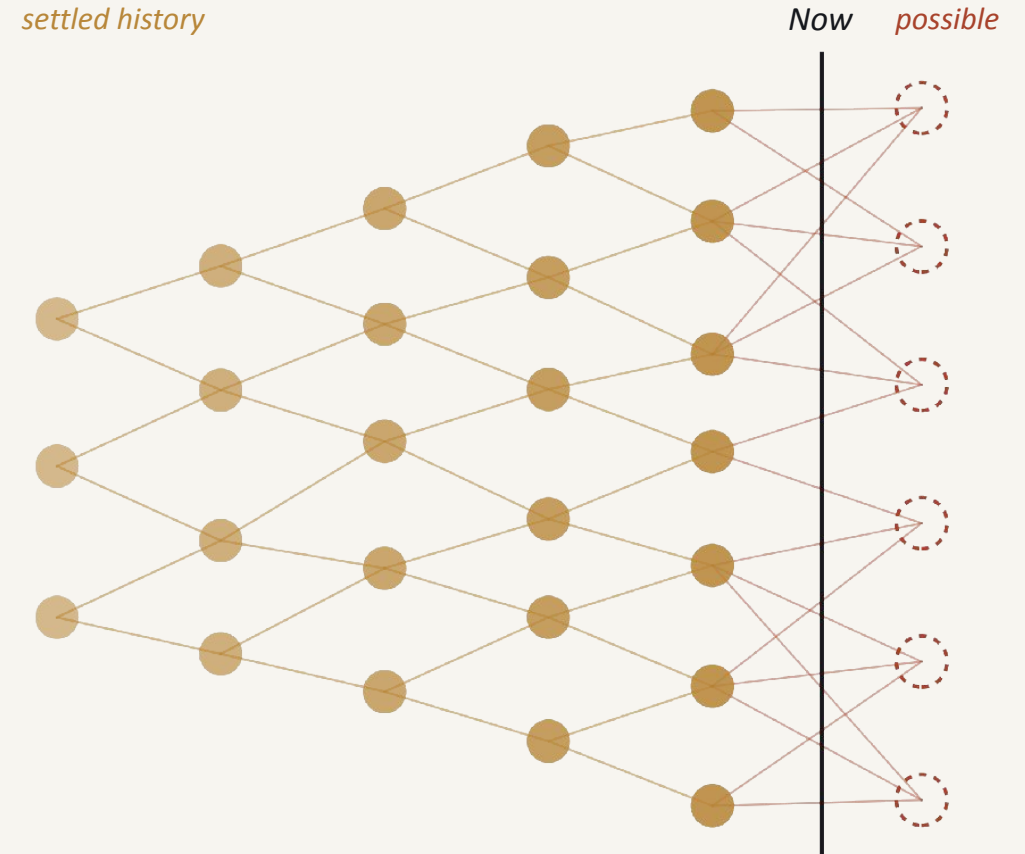
J. S. Bach, *Sonata BWV 1001*, autograph (1720), public domain · Johannes Vermeer, *The Guitar Player*, c. 1672, Kenwood House, public domain

Where does possibility live?



A non-local realm

Platonic forms; Whitehead's eternal objects, pure potentials that ingress into each occasion

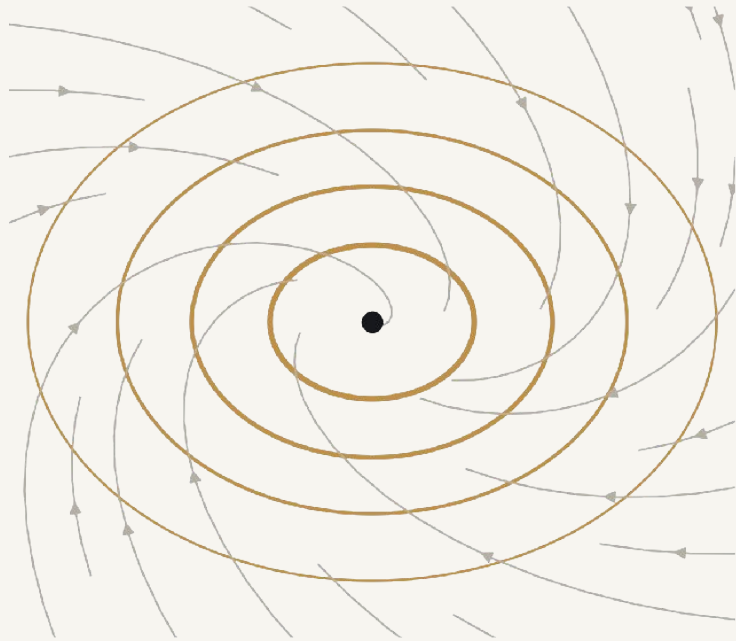


History itself

what can happen is built from the settled past of finite processes, still becoming through us

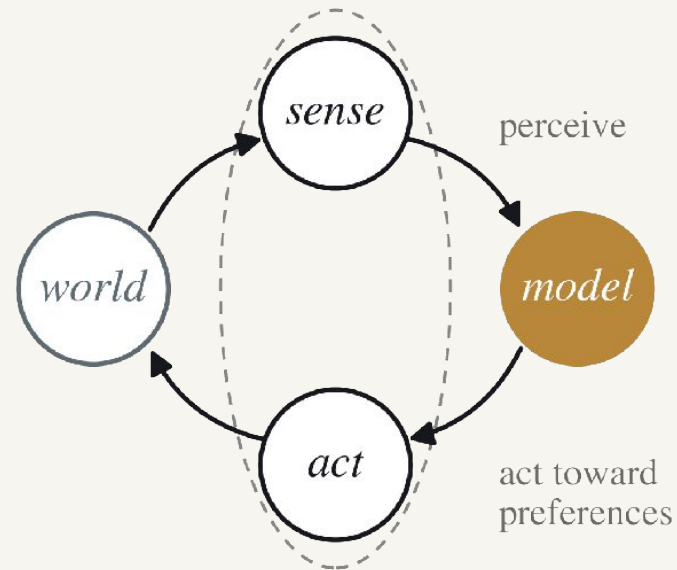
Model, loop, and Now

1 · The self-model *NESS*



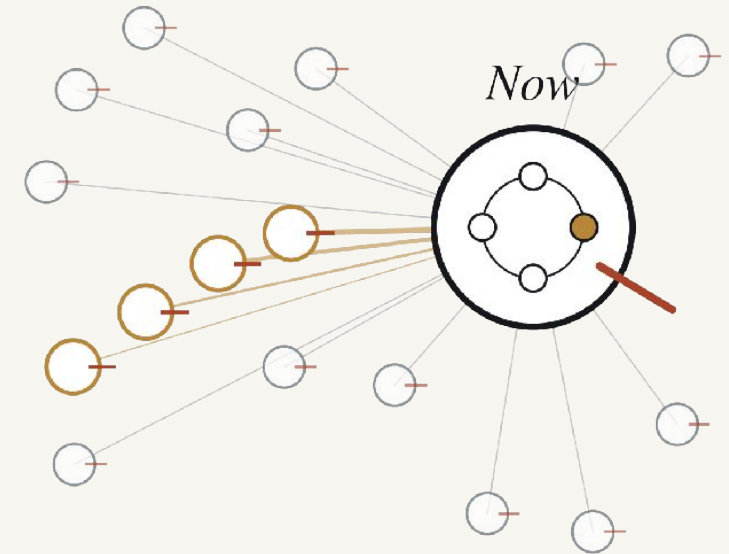
Being the shape a system keeps returning to

2 · The loop *active inference*



Doing sense and act, to stay within that shape
Goal Setting / Explore-Exploit

3 · The Now *CRR*



Becoming the loop is always lived now — among settled Nows, mine and others'

Two kinds of time



My time counts change

An occasion ends when enough has changed — quickly or slowly by the clock.



Our time counts seconds

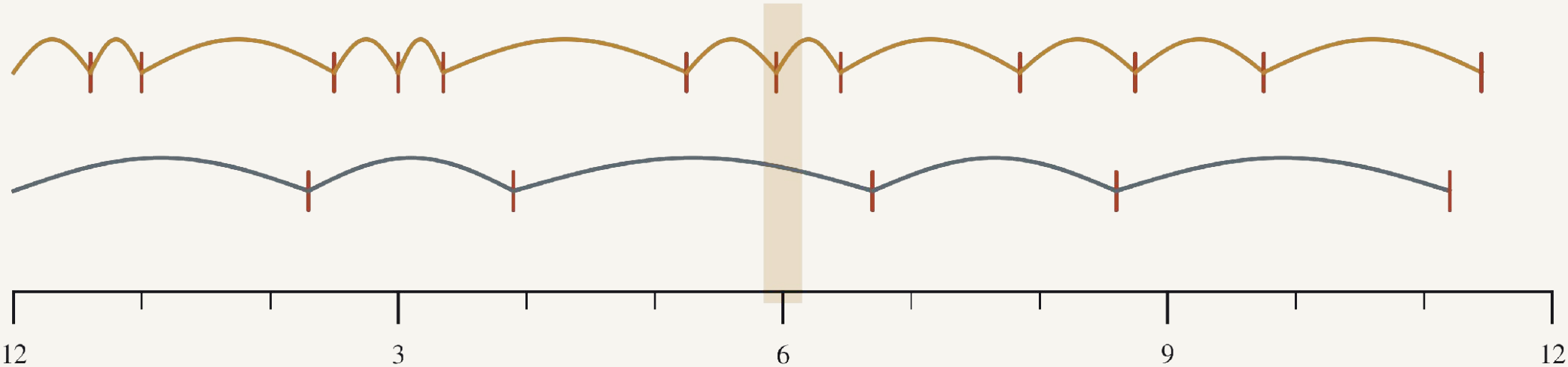
A map we agree on, so that different becomings can meet.

they meet at six

a child

a parent

the clock



Equanimity

Holding the past at its earned weight, so the other can come through in their fullness.

Past too heavy

I keep my old picture. The other can't arrive.



3.5
apart

Earned weight

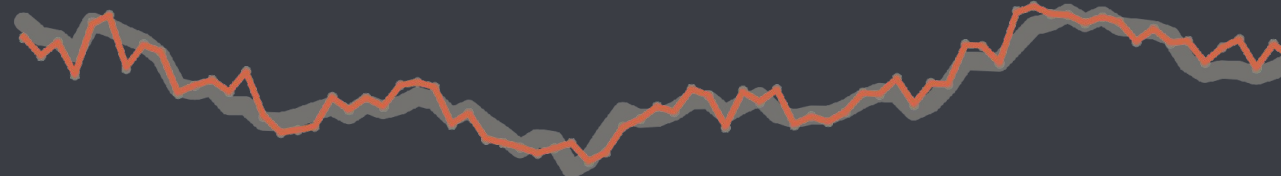
Close to the other, without becoming them.



0.62
apart

Past too light

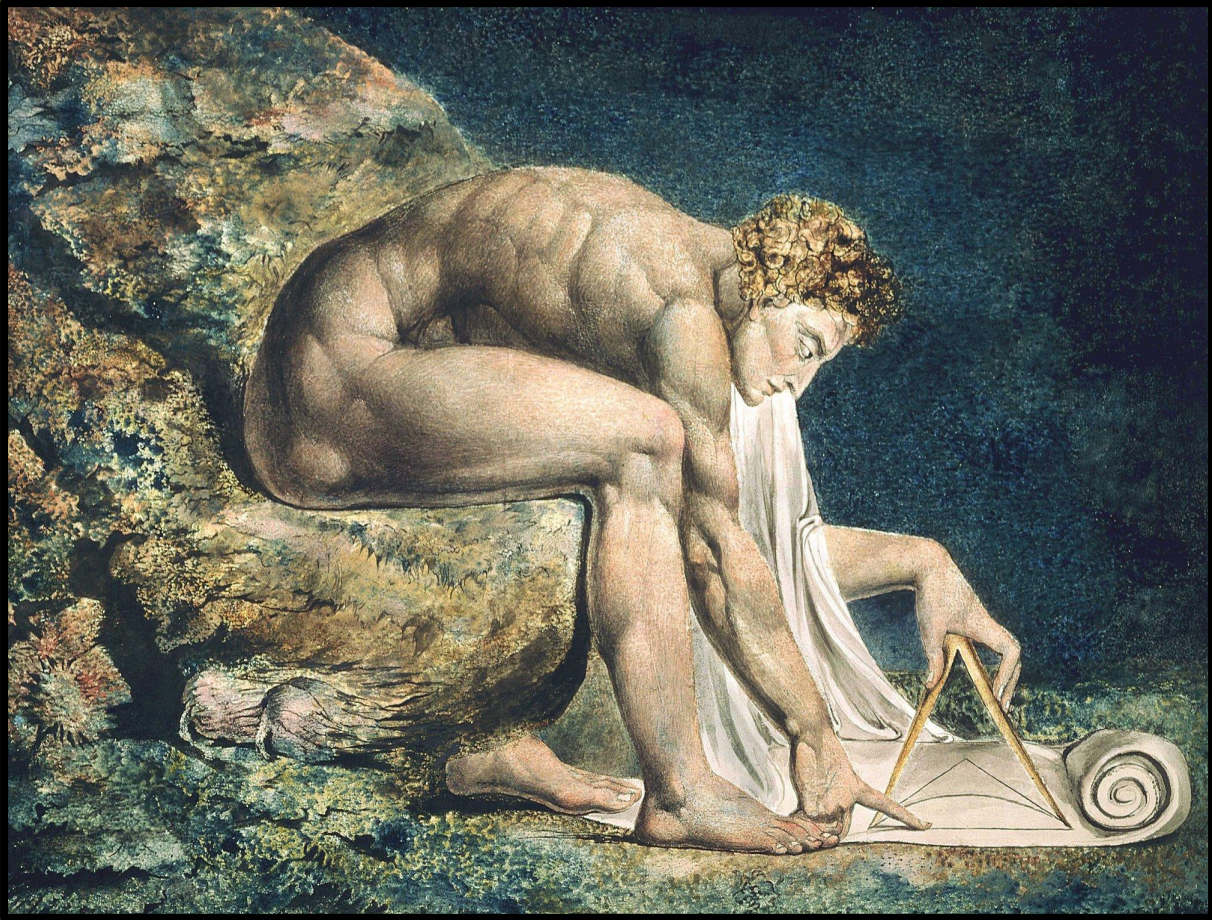
I jump at every glimpse. Carried by every ripple.



0.94
apart

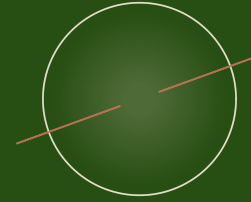
wide pale band the other as they are · dots glimpses that arrive · coloured line what I come to believe

For this world, the earned weight is the Kalman gain, $K = 1/\phi$, which CRR writes with $\Omega = 1$ — a real correspondence, not a universal law of equanimity.



William Blake, Newton, 1795–c. 1805. Tate. Public domain

The empty centre



In the mathematics

$\bar{o}$ (Now): no duration, no content. It separates; it does not fill.

In the philosophy

not filling what has not yet become with what we expect.

*“May God us keep
From Single vision & Newtons sleep”*

Blake, letter to Thomas Butts, 22 November 1802; Erdman (1988), p. 722

**Models are held, not mistaken
for the world / reality.**

Where CRR stands

- **Mathematical results**
mostly established information geometry, Bayesian filtering, dynamical systems
- **Retrodictive compatibility**
known domain results recovered through CRR ingredients
- **Heuristic usefulness**
questions, comparisons, corrections and engineering enquiries
- **Metaphysical interpretation**
a process ontology of finite becoming: settled past, open future (?)
(Cannot differentiate between Growing Block and Eternalism)
- **Prospective confirmation**
the open, testable question

197

rows in the original
retrodiction battery — rows,
not independent tests

62

literature-corrected
recoveries of known results
— compatibility, not
prediction

28

synthesis results found
incorrect, and kept in the
record

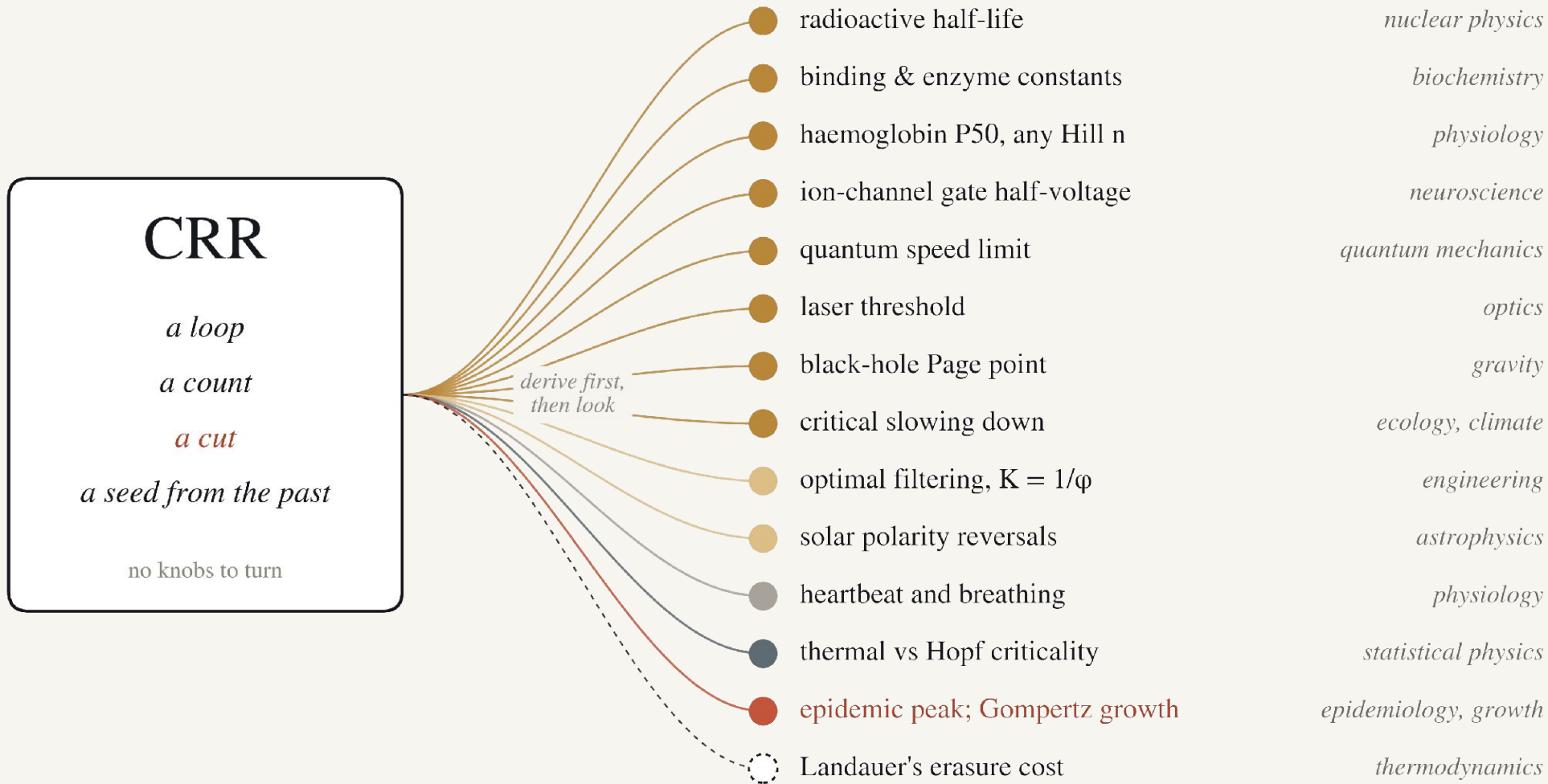
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replicated CRR-specific PASS-2
results — so far

A developing process-metaphysical framework and mathematical grammar of finite becoming. Whether it adds predictive power — and whether bridging heuristics are themselves scientifically valuable — are testable questions.

One small box, many worlds

Therefore, a candidate Heuristic / Theoretical Framework



Same few rules, no knobs turned: the half-turn keeps landing where others had already found something.



Earthrise, Apollo 8, 24 December 1968. Photo: William Anders, NASA. Public domain



*“The bird a nest, the spider a web, [hu]man
friendship.”*

William Blake, *The Marriage of Heaven and Hell* (c. 1790–93), ‘Proverbs of Hell’, pl. 8; ed. D. V. Erdman, *The Complete Poetry and Prose* (rev. edn, 1988), p. 36



“Eternity is in love with the productions of time.”

William Blake, *The Marriage of Heaven and Hell*, ‘Proverbs of Hell’, pl. 7; Erdman (1988), p. 36

A good-enough holding environment does not require the other
to become what we expected. It allows the other to arrive.

The difference matters.

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Diagrams: author’s own, drawn from the Clean_CRR canon.